Assignment 2-3 Amicable Pairs

An amicable pair is a pair of two different positive integers related in such a way that the sum of the proper divisors of each is equal to the other integer. That is, $s(a) = b$ and $s(b) = a$, where $s(n)$ is equal to the sum of positive divisors of n except n itself.

Input

The input consists of t ($30 \leq t \leq 40$) test cases. The first line of the input contains only positive integer t. Then t test cases follow. Each test case consists of exactly one line with two different integers a and b ($1 \leq a, b \leq 2^{31}$).

Output

For each such pair (a, b), you are to output a single line containing "amicable pair" or "non-amicable pair" depending on whether the pair (a, b) is an amicable pair.

Sample Input

2
220 284
100 200

Sample Output

amicable pair
non-amicable pair